

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 October 2001 (25.10.2001)

PCT

(10) International Publication Number
WO 01/80057 A1

BEST AVAILABLE COPY

(51) International Patent Classification⁷: G06F 17/00, A63F 13/00

(21) International Application Number: PCT/US01/12069

(22) International Filing Date: 12 April 2001 (12.04.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/551,034 17 April 2000 (17.04.2000) US

(71) Applicant: IGT [US/US]; 9295 Prototype Drive, Reno, NV 89510 (US).

(72) Inventors: BERG, Charles, R.; 11477 Lindy Place, Cupertino, CA 95014 (US). PASCAL, Andrew; 149 Pepper Avenue, Burlingame, CA 94010 (US).

(74) Agent: HIRSCH, Martin, J.; Marshall, O'Toole, Gerstein, Murray & Borun, 6300 Sears Tower, 233 S. Wacker Drive, Chicago, IL 60606 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

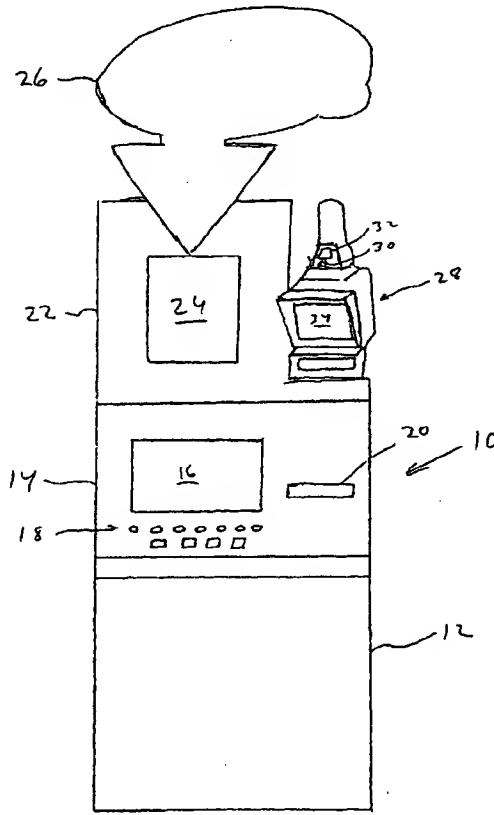
Published:

— with international search report

[Continued on next page]

(54) Title: SYSTEM AND METHOD OF CAPTURING A PLAYER'S IMAGE FOR INCORPORATION INTO A GAME

(57) Abstract: A system and method of capturing an image of a player of a game and displaying the player's image in association with the game, for example, on a screen (24) of a casino video game machine (10). Preferably the player's image is utilized within the play of the game being played by the player.



WO 01/80057 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

SYSTEM FOR AND METHOD OF CAPTURING A PLAYER'S IMAGE FOR INCORPORATION INTO A GAME

Background of the Invention

5 The present invention generally relates to a system for and method of capturing a player's image for incorporation into a game, especially casino type wagering video game.

Many games such as casino video games, employ visual effects to enhance player excitement and enthusiasm. Some video enhancements include video simulation of spinning reels and "virtual" displays of live casino table games.

10

Summary of the Invention

The present invention relates to a system and method of capturing an image of a player of a game and displaying the player's image in association with the game, such as on a screen of a casino video game machine. Preferably the player's image is utilized within the 15 play of the game being played by the player.

Brief Description of the Drawings

The present invention will be described with reference to the accompanying drawings, wherein:

20 Figure 1 is a schematic illustration of a front view of a casino video game machine in accordance with one embodiment of the present invention; and

Figures 2a-2c, are front, side perspective illustrations of a TV camera system that may be utilized in an embodiment of the present invention.

25 **Brief Description of a Preferred Embodiment**

The present invention will be described with reference to the accompanying drawings wherein like reference numerals refer to the same item.

There is shown in Figure 1 a casino video game machine 10 generally configured as a "slant top" machine in which a player usually sits on a stool or chair in front of the machine

30 10. It should be appreciated from a further reading of the preferred embodiment that the instant invention may be employed with a wide variety of games, however, such as "upright," stand alone video game machines, such as casino table games, and such as games played with a computer monitor and keyboard.

The machine 10 includes a generally boxed shaped base 12 that house electronics and other equipment used in the operation of the game. The machine 10 also includes a slanted section 14 that contains a main game video monitor 16, a series of game control buttons 18 (although the invention contemplates that touch screen, light pen, track ball, mouse, and other game control facilities may be utilized), and monetary acceptance devices 20, such as a bill validator, a coin comparator, and an electronic funds transfer device. The machine 10 also includes an upper display section 22 that may contain graphic displays, lights, and a second video monitor 24. A display sign 26 may be mounted on top of the machine 10.

In addition to the foregoing features, the game machine 10 according to a preferred embodiment of the present invention includes a TV camera 28, which includes generally a video camera 30, a light source 32, an LCD display 34, and an LCD driver board 36. The TV camera 28 is preferably mounted above the slanted section 14 of the machine 10 and is generally oriented toward the area where a player's head and face would usually be located during the play of the game. In a preferred embodiment, the video camera utilized a 6mm lens, a field of view of approximately 35 degrees vertical by 45 degrees horizontal, and a depth of focus that is infinite.

The LCD display 34 may be used to show preloaded still shots or motion pictures that either advertise the casino or the game, or are directed specifically toward the play of the game. For example, the LCD display 34 may show messages such as "Be A Winner," "Win A Jackpot," or "Big Buffet at Noon in the Squire Room" or may display motion pictures of entertainment groups performing at the casino or other activities associated with the casino. It is also contemplated within the broad scope of the instant invention that the TV camera may have a mode of operation as an information kiosk which includes push button, touch screen, or other control systems by which a person may view a display of a map of the casino, information on various events happening at the casino, and similar information. It is also contemplated that the TV camera may include sound speakers and a system by which a person may communicate telephonically with a person in a hotel room of the casino, with the casino hotel concierge, with the casino staff to report problems with the machine, and with other persons for casino related matters.

The video camera 30 captures an image within the field of view of the lens of the video camera 30, which would usually include the head and face of a player who plays the

machine 10. Instead of the image being captured on photographic film, the image is captured through an electronic sensor board (not shown). The images captured on the electronic sensor board may be selectively used for a variety of purposes, including verification of the identity of a player with a player tracking card used by the player of the machine 10 and 5 including security purposes. In the preferred embodiment, the video camera 30 is used to capture a player's image on selected occasions during the player's play of the casino game on the machine 10. In a preferred embodiment, the player's image is replicated continuously in real time for a selected time interval on the LCD display 34 along with some sort of countdown, which may be a display of numerals decreasing in value to 0 on the LCD display 34 10 or by a sound command, which may be a preloaded soundtrack of a person voicing the count down and giving similar instructions. At the end of the countdown, the player's image is used as a "still shot" and is replicated on at least one of the monitors 16, 24 for use in connection with the play of the game. It is contemplated that the player's "still shot" may be displayed on at least one of the monitors 16, 24 in a preselected location, that the player's 15 image may be utilized as the "head" of an animated person or character appearing on the monitor 16, 24, or as a symbol on a series of simulated reels or cards appearing on the monitor 16, 24. The invention also contemplates that the player's image captured by the video camera 30 may be cropped so that only the player's head (and no background) is replicated on one of the monitors 16, 24. The image of the player captured by the video 20 camera 30 either may be a "still shot" or may be continuously displayed in real time on at least one of the monitors 16, 24 or on another display in the casino.

The player's image may be utilized in the play of a primary game, or may be displayed only, or also, in connection with a secondary event or bonus game.

In an alternative embodiment, a player may push a button to initiate the taking of a 25 still shot picture or the player push button which permits a still picture of the player to be retaken if the player is dissatisfied with the initial still picture.

The invention also contemplates that the images of more than one player may be replicated in the play of the game. Thus, for example, if the game involves two boxers, outer space warriors, or car racers, then the images of multiple players may be correspondingly 30 placed with an associated one of the characters in the game.

The present invention also contemplates that the player's image may be replicated on

one or more display screens positioned so as to be readily viewed by other casino patrons at various locations around the casino, or in the display sign 26 located on top of the machine 10. If, for example, a player hits a jackpot or otherwise achieves a special event, then the player's image may be widely displayed for purposes of generating interest in the game and 5 which for most players will give them the satisfaction of publicizing their success at the game.

The invention further contemplates that the player's image captured by the video camera 30 would also be relayed to the casino's security so that if a player makes an obscene gesture or the image is otherwise offensive, then the casino security may override the system 10 and delete or cancel the display of the player's image. The invention may also employ an image recognition system that scans the image for features such as two eyes, a nose, a mouth, a chin, etc. and if the image does not contain such features or a preselected minimum number of such features, then the system will reject the image and not display the image.

It should be appreciated that the TV camera 28 may be mounted at a variety of 15 locations in, on, about, or near the machine 10 and that the video camera 30 need not be positioned adjacent to the LCD display 34. The invention also contemplates that more than one video camera 30 may be utilized so that a preferred view of the player may be selected or so that a three dimensional image may be created and replicated on monitors and display screens.

20 Because the ambient light in the vicinity of a player may be insufficient to create quality contrast in the player's captured image, the TV camera 28 further includes a light source 32 that may be selectively activated to shine a predetermined intensity of light generally toward objects in the field of view of the video camera 30.

The present invention also contemplates that the still shot of the player's image may 25 be replicated on photographic paper or other paper by means of a suitable printer. The machine 10, in such an embodiment, would include a source of such paper, a printer, and a dispenser so that the player may keep the printed image as a takeaway memento. The paper, printer, and dispenser may also be located at a remote location. Preferably the printed material includes not only the player's image, but also a recognizable feature, logo, or name 30 of the game and the casino, the dollar value of the player's winnings, the player's name, and other information. If the player uses a player tracking card during the play of the game, then

data from the card may be electronically transmitted to the printer for inclusion on the memento.

At a selected time, such as at the end of a round of play of the game, any player image being displayed would be erased.

5 The operation of an exemplary embodiment of the present invention will now be described. A player places an appropriate amount of money in the monetary acceptance device 20 and begins play of a video draw poker game in which the cards are displayed in the monitor 16 and in which the player implements his or her decisions concerning the play of the game through the control buttons 18. The player either gains credits or loses credits

10 according to a preestablished payoff table based generally upon the poker rank of the hand achieved by the player. If the player achieves a very good poker hand, such as five of a kind (which may be achieved by using wild cards in a standard deck of 52 cards), then the player may be automatically enrolled in the play of a secondary event game or bonus game. At this time, the monitors 16, 24 may flash various messages concerning the bonus game, and lights, bells, whistles, and other attention getting signals may be activated. Soon thereafter, a

15 preloaded motion picture of a person pretending to be a motion picture director appears on the LCD display 34 and announces (through the sound systems associated with the machine 10 or the TV camera 28) that the player is going into a bonus round and enthusiastically commands the player to get ready to have his or her picture taken. The producer then begins

20 a countdown such as "ready, set, go" or "five, four, three, two, one, zero." During the countdown, the light source 32 is activated, and the player's image is captured by the video camera 30 and replicated on at least a portion of the LCD display 34, such as within an oval shaped area appearing centrally on the LCD display 34. During the countdown, the player can see his or her image replicated on the LCD display 34 and can adjust his or her position,

25 smile; and otherwise arrange themselves in a desirable pose. At the end of a countdown, a still shot of a player's image is taken and replicated on at least a portion of the monitor 16, again, which may be in an oval shaped area on the monitor 16. The player then plays a secondary event or bonus game, which, for example, may be a game of "Family Feud," by which the player may win additional credits. The secondary event game may be played on

30 either of the monitors 16, 24 or both of the monitors 16, 24. At the end of the play of the secondary event game, the player's image is erased from the system and disappears from both

the LCD display and the monitors 16, 24.

It is to be understood, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes 5 may be made in detail, especially in matters of shape, size and arrangement of parts or types of material within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

Although particular embodiments of the present invention have been described and illustrated herein, it should be recognized that modifications and variations may readily occur 10 to those skilled in the art and that such modifications and variations may be made without departing from the spirit and scope of the invention. Consequently, the invention as claimed below may be practiced otherwise than as specifically described above.

What is Claimed is

- 1 1. A method of capturing a player's image for incorporation into a casino game
2 comprising the steps of:
 - 3 using a camera to capture the image of a player of the casino game who is located
4 within the field of view of the camera;
 - 5 electronically sensing the image captured by the camera;
 - 6 electronically displaying at least a portion of the electronically sensed image on a first
7 electronic display associated with the game such that the displayed portion of the image is
8 utilized within the play of the casino game being played by the player.
- 1 2. A method according to claim 1, wherein substantially the entire portion of the
2 electronically sensed image is displayed.
- 1 3. A method according to claim 1, wherein the displayed portion of the image is still.
- 1 4. A method according to claim 1, wherein the displayed portion of the image is
2 substantially real time and continuous.
- 1 5. A method according to claim 1, comprising further steps of notifying the player
2 when the captured image will be electronically sensed.
- 1 6. A method according to claim 5, wherein the player is notified using a sound signal.
- 1 7. A method according to claim 5, wherein the player is notified using a visual signal.
- 1 8. A method according to claim 5, wherein the player is notified by using both a
2 sound signal and a visual signal.
- 1 9. A method according to claim 6, wherein such sound signal is electronically
2 generated.

1 10. A method according to claim 9, wherein such sound signal comprises an
2 electronically generated human voice simulation.

1 11. A method according to claim 1, wherein the camera is oriented such that the
2 image of the player's face is usually within the field of view during substantially throughout
3 the duration of the play of the game.

1 12. A method according to claim 1, comprising the further step of electronically
2 displaying at least a portion of the electronically sensed image on a second electronic display
3 associated with the game.

1 13. A method according to claim 1, wherein the casino game comprises a reel or reel
2 simulation game including an array of frames and wherein the displayed portion of the image
3 appears substantially within a frame.

1 14. A method according to claim 1, wherein the casino game comprises a card game
2 and wherein the displayed portion of the image appears substantially within a depiction of a
3 card.

1 15. A method according to claim 1, wherein the casino game comprises a video
2 sports game including depictions of human sports players and wherein the displayed portion
3 of the image appears substantially in the region wherein the human sports player's head
4 would usually appear.

1 16. A method according to claim 1, wherein the casino game includes the video
2 depiction of a figure selected from the group consisting of: a robot in a human configuration,
3 an outer space humanoid, a cartoon character, and an animal, and wherein the displayed
4 portion of the image appears substantially in the region where the figure's head would usually
5 appear.

1 17. A method according to claim 1, where the casino game includes a video depiction

2 of a human and wherein the displayed portion of the image appears substantially in the region
3 where the human's head would usually appear.

1 18. A method according to claim 1, comprising the further step of cropping the
2 electronically sensed image such that the displayed portion of the image consists essentially
3 of an image of the player without any background image.

1 19. A method of capturing a player's image for incorporation into a casino game
2 comprising the steps of:

3 using a first camera to capture the image of a player of the casino game who is located
4 in the field of view of the first camera;

5 using a second camera positioned at a location different from the first camera to
6 capture the image of a player of the casino game who is located in the field of view of the
7 second camera;

8 electronically sensing the image captured by the first camera;

9 electronically sensing the image captured by the second camera;

10 electronically combining both electronically sensed images;

11 electronically displaying at least a portion of the combined images on a first electronic
12 display associated with the game such that the displayed portion of the combined image
13 creates a three dimensional effect and is utilized within the play of the casino game being
14 played by the player.

1 20. A method of capturing a player's image for incorporation into a wagering game
2 comprising the steps of:

3 using a camera to capture the image of a player of the wagering game who is located
4 within the field of view of the camera;

5 electronically sensing the image captured by the camera;

6 electronically displaying at least a portion of the electronically sensed image on a first
7 electronic display associated with the game such that the displayed portion of the image is
8 utilized within the play of the wagering game being played by the player.

1 21. A method according to claim 20, wherein substantially the entire portion of the
2 electronically sensed image is displayed.

1 22. A method according to claim 20, wherein the displayed portion of the image is
2 still.

1 23. A method according to claim 20, wherein the displayed portion of the image is
2 substantially real time and continuous.

1 24. A method according to claim 20, comprising the further step of notifying the
2 player when the captured image will be electronically sensed.

1 25. A method according to claim 24, wherein the player is notified using a sound
2 signal.

1 26. A method according to claim 24, wherein the player is notified using a visual
2 signal.

1 27. A method according to claim 24, wherein the player is notified by using both a
2 sound signal and a visual signal.

1 28. A method sensing to claim 25, wherein such sound signal is electronically
2 generated.

1 29. A method according to claim 28, wherein such sound signal comprises an
2 electronically generated human voice simulation.

1 30. A method according to claim 20, wherein the camera is oriented such that the
2 image of the player's face is usually within the field of view during substantially throughout
3 the duration of the play of the game.

1 31. A method according to claim 20, comprising the further step of electronically
2 displaying at least a portion of the electronically sensed image on a second electronic display
3 associated with the game.

1 32. A method according to claim 20, wherein the wagering game comprises a reel or
2 reel simulation game including an array of frames and wherein the displayed portion of the
3 image appears substantially within a frame.

1 33. A method according to claim 20, wherein the wagering game comprises a card
2 game and wherein the displayed portion of the image appears substantially within a depiction
3 of a card game and wherein the displayed portion of the image appears substantially within a
4 depiction of a card.

1 34. A method according to claim 20, wherein the wagering game comprises a video
2 sports game including depictions of human sports players and wherein the displayed portion
3 of the image appears substantially in the region wherein the human sports player's head
4 would usually appear.

1 35. A method according to claim 20, wherein the wagering game includes the video
2 depiction of a figure selected from the group consisting of: a robot in human configuration,
3 an outer space humanoid, a cartoon character, and an animal, and wherein the displayed
4 portion of the image appears substantially in the region where the figure's head would usually
5 appear.

1 36. A method according to claim 20, where the wagering game includes a video
2 depiction of a human and wherein the displayed portion of the image appears substantially in
3 the region where the human's head would usually appear.

1 37. A method according to claim 20, comprising the further step of cropping the
2 electronically sensed image such that the displayed portion of the image consists essentially
3 of an image of the player without any background image.

1 38. A method of capturing a player's image for incorporation into a wagering game
2 comprising the steps of:

3 using a first camera to capture the image of a player of the wagering game who is
4 located in the field of view of the first camera;

5 using a second camera positioned at a location different from the first camera to
6 capture the image of a player of the wagering game who is located in the field of view of the
7 second camera;

8 electronically sensing the image captured by the first camera;

9 electronically sensing the image captured by the second camera;

10 electronically combining both electronically sensed images;

11 electronically displaying at least a portion of the combined images on a first electronic
12 display associated with the game such that the displayed portion of the combined image
13 creates a three dimensional effect and is utilized within the play of the wagering game being
14 played by the player.

1 39. A system for capturing a player's image for incorporation into a casino game
2 comprising:

3 means for capturing the image of a player of the casino game;

4 means for electronically sensing the image captured by said capturing means;

5 means for electronically displaying at least a portion of the image sensed by said

6 sensing means on a first electronic display associated with the game such that the displayed
7 portion of the image is utilized within the play of the casino game being played by the player

1 40. A system for capturing a player's image for incorporation into a wagering game
2 comprising:

3 means for capturing the image of a player of the wagering game;

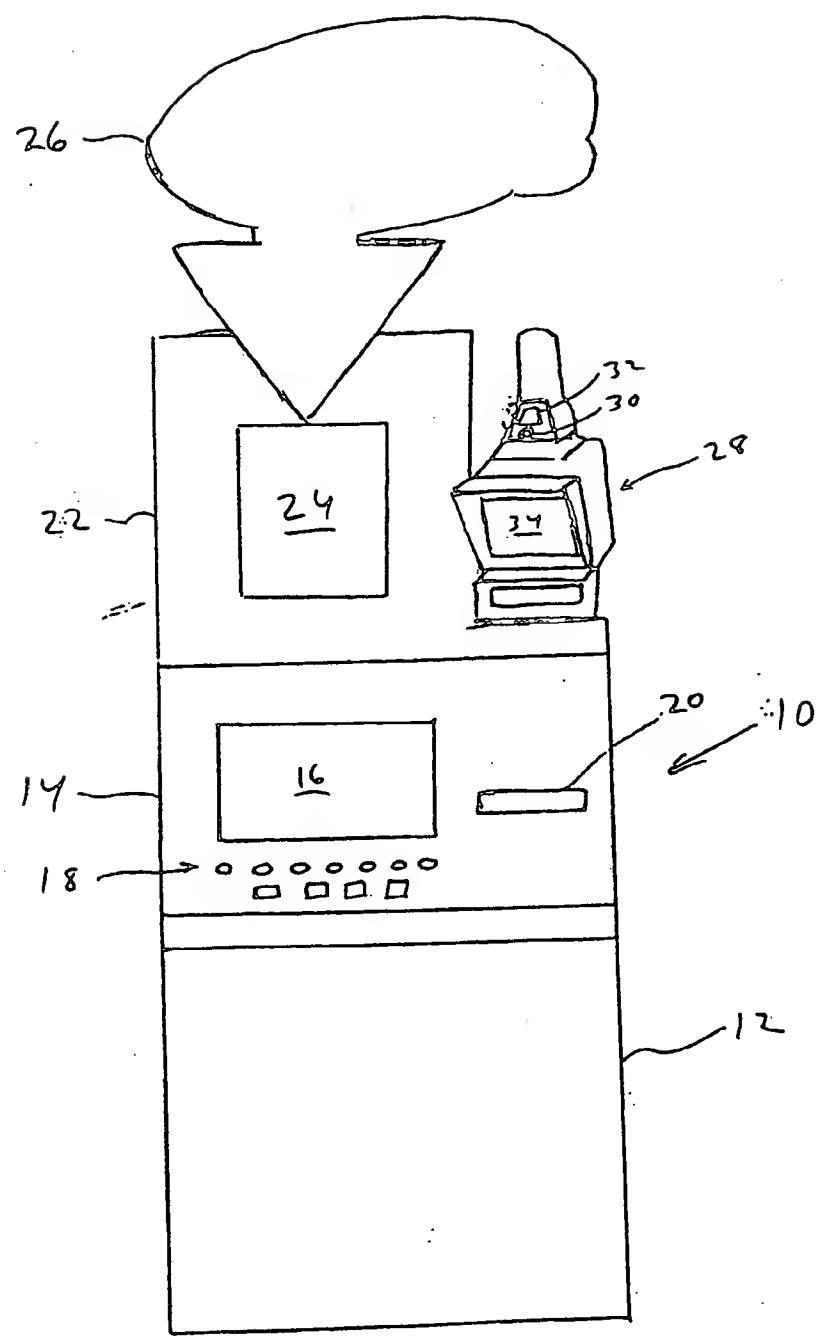
4 means for electronically sensing the image captured by said capturing means;

means for electronically displaying at least a portion of the image sensed by said

6 sensing means on a first electronic display associated with the game such that the displayed
7 portion of the image is utilized within the play of the wagering game being played by the
8 100

1/2

Fig. 1



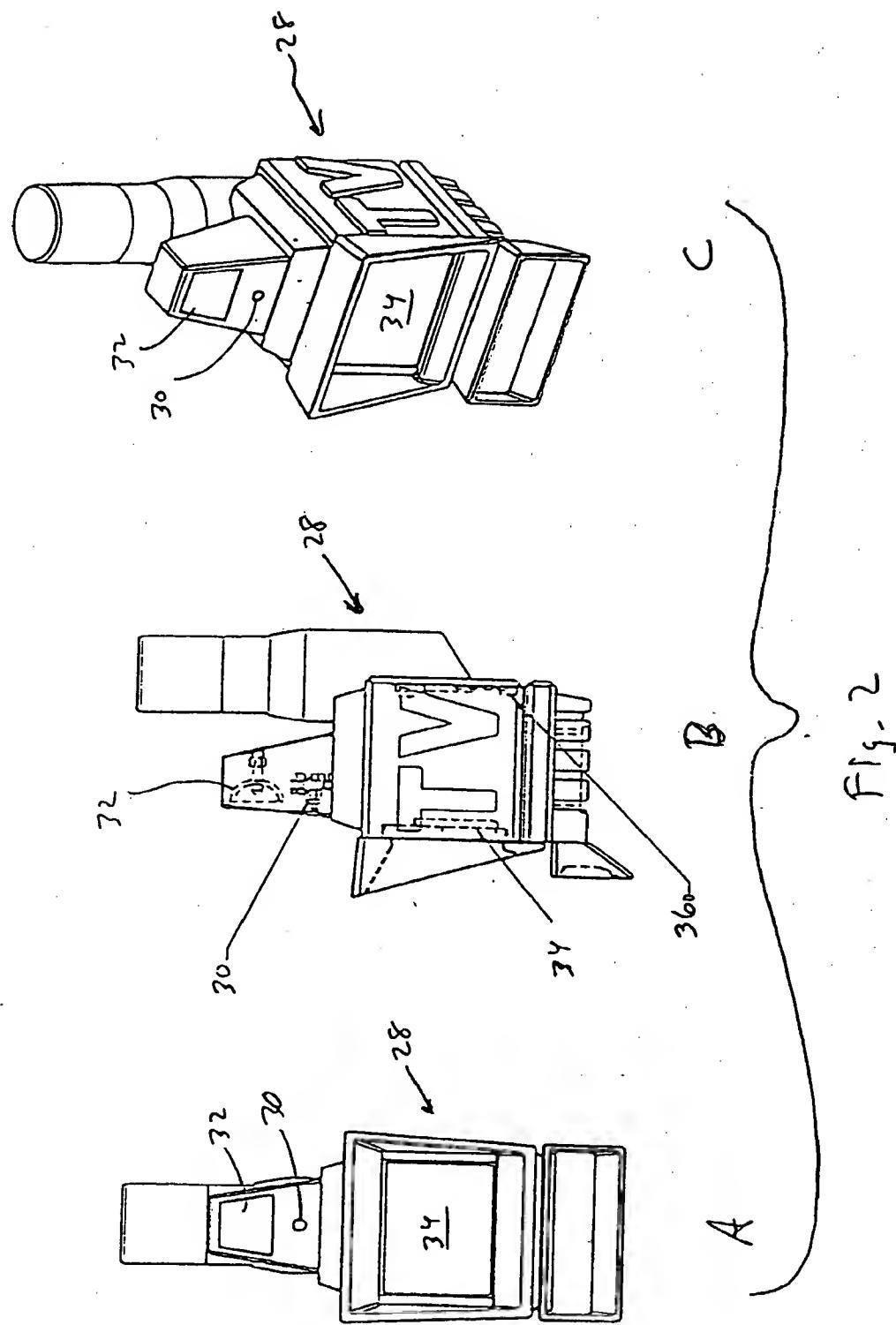


Fig. 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/12069

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/00; A63F 13/00
US CL : 463/31

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 463/31, 1, 16, 30, 43; 345/434, 118

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST search terms: camera, image, player, three-dimensional, reel, card, picture

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,710,873 A (BRESLOW et al.) 01 December 1987 (1.12.1987), columns 1 & 2.	1-12, 15-31, 34-40
A, P	US 6,120,379 A (TANAKA et al.) 19 September 2000 (19.09.2000), entire document.	1-40
Y	US 5,397,133 A (PENZIAS) 14 March 1995 (14.03.1995), column 2, lines 49-57.	4, 23
Y, P	US 6,072,523 A (ZAJFMAN et al.) 06 June 2000 (06.06.2000), columns 1 & 2.	19, 38
Y	US 4,105,310 A (HIRATA et al.) 08 August 1978 (8.08.1978), entire document.	5-10, 24-29
Y, P	US 6,168,523 B1 (PIECHOWIAK et al.) 02 January 2001 (2.01.2001), Figures 7 & 8.	12, 31
Y	US 5,595,389 A (PARULSKI et al.) 21 January 1997 (21.01.1997), columns 1 & 2, Figures 1 & 2.	15-18, 34-37
A	US 4,688,105 A (BLOCH et al.) 18 August 1987 (18.08.1987), entire document.	1-40
A, P	US 6,142,876 (CUMBERS) 07 November 2000 (7.11.2000), entire document.	1-40
A	US 5,423,554 A (DAVIS) 13 June 1995 (13.06.1995), entire document.	1-40

Further documents are listed in the continuation of Box C.

See patent family annex.

Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

01 June 2001 (01.06.2001)

Date of mailing of the international search report

14 JUN 2001

Name and mailing address of the ISA/US

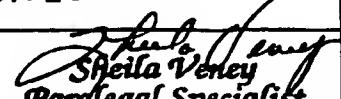
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Valencia Martin-Wallace

Telephone No. 703-308-1078


Sheila Veney
Paralegal Specialist
Technology Center 3700

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

This Page Blank (uspto)